

ABSTRACT

An analytical system is provided for determining nitrogen monoxide, nitrogen dioxide and ozone concentrations in air samples. An ultraviolet light source is used to alter the equilibrium between nitrogen dioxide and oxygen on the one hand and nitrogen monoxide and ozone on the other. Dynamic measurement of ozone concentration with time whilst ultraviolet irradiation is pulsed enables each gas concentration to be calculated without requiring input gases to be scrubbed. An apparatus is further provided to provide a controlled flow of gas to a sensor attached to a high altitude balloon whilst sheltering it from the elements and allowing for affects of temperature, said apparatus comprising a shield and a gas conducting means which uses the venturi effect to control air flow or has a hole to allow water to drain without affecting air flow past the sensor.